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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/24/2001

Diane M. Landers

DP-306554 / DE3-0257

7053

7590

10/06/2004

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EXAMINER

SHECHTMAN, SEAN P

ART UNIT

PAPER NUMBER

2125

DATE MAILED: 10/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<p align="center"><b>Office Action Summary</b></p>	<p>Application No.</p> <p align="center">10/032,959</p>	<p>Applicant(s)</p> <p align="center">LANDERS ET AL.</p>	
	<p>Examiner</p> <p align="center">Sean P. Shechtman</p>	<p>Art Unit</p> <p align="center">2125</p>	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 August 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-88 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-88 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 October 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) *  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>6/25/02; 2/26/03; .</u> | 6) <input checked="" type="checkbox"/> Other: <u>See Continuation Sheet.</u>            |

Continuation of Attachment(s) 6). Other: IDS filed 3/3/03; 8/28/03; 9/17/03; 8/16/04.

### DETAILED ACTION

1. Claims 1-88 are presented for examination.

#### *Drawings*

2. Figure 3 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

#### *Specification*

3. Applicant is reminded of the proper language and format for an abstract of the disclosure. The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details. The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

4. **Content of Specification**

- (a) Title of the Invention
- (b) Cross-References to Related Applications: See 37 CFR 1.78 and MPEP § 201.11 (See cross-reference to related applications in the Detailed Description of the Invention on paragraph 4 on page 5 of the instant specification).
- (c) Statement Regarding Federally Sponsored Research and Development
- (d) Incorporation-By-Reference Of Material Submitted On a Compact Disc
- (e) Background of the Invention: See MPEP § 608.01(c). The specification should set forth the Background of the Invention in two parts:

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- (1) **Field of the Invention:** A statement of the field of art to which the invention pertains. This statement may include a paraphrasing of the applicable U.S. patent classification definitions of the subject matter of the claimed invention. This item may also be titled "Technical Field."
- (2) **Description of the Related Art including information disclosed under 37 CFR 1.97 and 37 CFR 1.98:** A description of the related art known to the applicant and including, if applicable, references to specific related art and problems involved in the prior art which are solved by the applicant's invention. This item may also be titled "Background Art." (See the description of the related art known to applicant in the Detailed Description of the Invention in the instant specification).
- (f) **Brief Summary of the Invention**
- (g) **Brief Description of the Several Views of the Drawing(s)**
- (h) **Detailed Description of the Invention**
- (i) **Claim or Claims**
- (j) **Abstract of the Disclosure**
- (k) **Sequence Listing**

***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-88 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

5. Claim 23 appears to require the limitation of a blank that machines a coordinate system into an actual part. The examiner respectfully submits that the instant specification fails to provide enablement for a blank that machines a coordinate system into an actual part. One of ordinary skill in the art would not know how a blank would machine a coordinate system into an actual part.

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6. Claims 1, 45, and 67 appear to require the limitation of a selection of a blank establishing a coordinate system. The examiner respectfully submits that the instant specification fails to provide enablement for the selection of a blank establishing a coordinate system. One of ordinary skill in the art would not know how the selection of a blank would establish a coordinate system.

7. Should applicant argue that any of the rejections provided in Office Action are logically inconsistent, because the examiner rejected claims 1-88 as not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention, while simultaneously, also rejecting claims 1-88 under prior art, the examiner would respectfully disagree. *In the interests of compact prosecution, indefiniteness rejections and prior art rejections may be made simultaneously.*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 4, 6, 8-10, 18-20, 26, 28, 30, 32, 40-42, 46, 48, 50, 62-64, 68, 70, 72, 74, and 84-86 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. Claim 4 recites the limitation that “said associative relationship is a parent/child relationship”, however claim 3, from which claim 4 depends, recites the limitation of “an associative relationship”, and claim 1, from which claim 4 depends, recites the limitation of “an

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associative relationship”. Therefore, it is not clear which associative relationship is “said associative relationship”.

9. Claim 6 recites the limitation that “said associative relationship is a parent/child relationship”, however claim 5, from which claim 6 depends, recites the limitation of “an associative relationship”, and claim 1, from which claim 5 depends, recites the limitation of “an associative relationship”. Therefore, it is not clear which associative relationship is “said associative relationship”.

10. Claim 8 recites the limitation that “said associative relationship is a parent/child relationship”, however claim 7, from which claim 8 depends, recites the limitation of “an associative relationship”, and claim 1, from which claim 7 depends, recites the limitation of “an associative relationship”. Therefore, it is not clear which associative relationship is “said associative relationship”.

11. Claim 20 recites the limitation that “said associative relationship is a parent/child relationship”, however claim 19, from which claim 20 depends, recites the limitation of “an associative relationship”, and claim 1, from which claim 19 depends, recites the limitation of “an associative relationship”. Therefore, it is not clear which associative relationship is “said associative relationship”.

12. Dependent claims 26, 28, 30, 42, 46, 48, 50, 64, 68, 70, 72, 74, and 86 recite the same indefinite terminology with respect to the term “an associative relationship”, and therefore, are also indefinite. Namely, which associative relationship is “said associative relationship”?

13. Claims 9, 10, 32, recite the limitations "said master product and process model" in line 2. Claims 18, 40, 62, and 84 recite the limitations "said manufacturing instructions" in lines 1-2.

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Claims 19, 41, 63, and 85 recite the limitations "said product drawings" in lines 1-2. There is insufficient antecedent basis for these limitation(s) in the claim(s).

14. Due to the number of 35 USC § 112 rejections, the examiner has provided a number of examples of the claim deficiencies in the above rejections, however, the list of rejections may not be all inclusive. Applicant should refer to these rejections as examples of deficiencies and should make all the necessary corrections to eliminate the 35 USC § 112 problems and place the claims in proper format. Due to the vagueness and a lack of clear definition of the terminology and phrases used in the specification and claims, the claims have been treated on their merits as best understood by the examiner.

***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

15. Claims 67-88 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Referring to claims 67-88, the data signal is not tangibly embodied in a medium. Data structures not claimed as embodied in computer-readable media are descriptive material per se and are not statutory because they are not capable of causing functional change in the computer. See, e.g., Warmerdam, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:



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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

- (1). Determining the scope and contents of the prior art.
- (2). Ascertaining the differences between the prior art and the claims at issue.
- (3). Resolving the level of ordinary skill in the pertinent art.
- (4). Considering objective evidence present in the application indicating obviousness or nonobviousness.

16. Claims 1-88 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 6,629,065 to Gadh (supplied by applicant) in view of U.S. Pat. No. 4,928,221 to Belkhiter. Claims 1-20, 23-42, 45-64, 67-86 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 6,629,065 to Gadh in view of U.S. Pat. No. 6,430,455 to Rebello (supplied by applicant).

Referring to claims 1, 23, 45, and 67, Gadh clearly teaches a method, system, part, and computer program of horizontally structured CAD/CAM manufacturing for concurrent product and process design (Fig. 55A and 55B; Col. 36, lines 28-39; Col. 8, lines 5-24), comprising: selecting a blank for machining into an actual part establishing a coordinate system (Figs. 10A-10C and corresponding description, i.e., "rubber-banding"); creating a master product and process concurrent model (Col. 10, lines 22-58) comprising: a virtual blank corresponding to said blank (Fig. 55A, element b1); a manufacturing feature (Fig. 55A, any of elements nw or nb); virtual machining of said manufacturing feature into said virtual blank (See Fig. 55A and Col. 36, lines 28-39), said manufacturing feature exhibiting an associative relationship with said coordinate system (See Fig. 25A-25D; Col. 24, lines 6-32).

Gadh clearly teaches a design intent graph (D) used to create a design and record the specified design constraints to be used in future design activities. Clearly, D refers to the intended/desired geometric relations between the models features (Col. 20, lines 56-65). Gadh clearly teaches exemplary embodiments of a “machined part constructed in VDSF” with its corresponding D (Col. 36, lines 28-34).

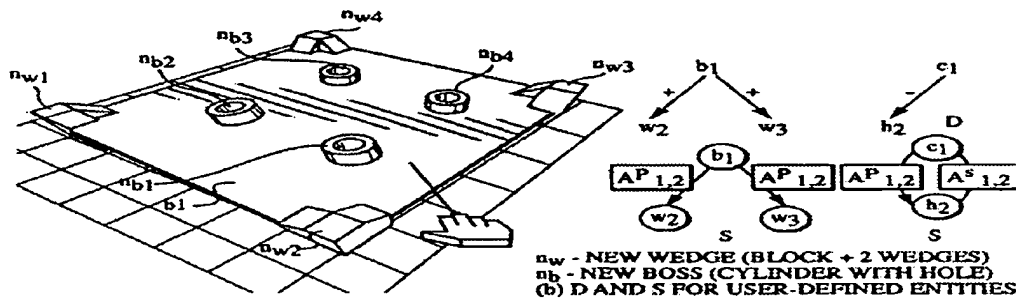
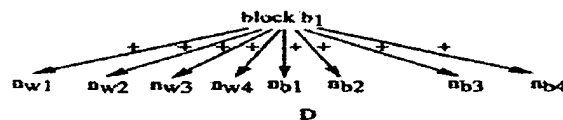


FIG. 55A



**FIG. 55B**

Clearly, the D depicted above, is horizontally structured. The virtual blank is element b1, and a manufacturing feature could clearly be any of nw or nb with exclusive relationships to b1. Gadh clearly teaches elements as add-ins, wherein, as mentioned above, the figures depict “a machined part constructed in VDSF”. Gadh clearly shows the manufacturing features on a grid coordinate system. Furthermore, Gadh clearly teaches a child element (which can clearly be interpreted, without question, as any of the nw or nb elements) has an associative relationship with the coordinate system. The VDSF display viewed by the user is considered as having a right-left/top-bottom/front-rear coordinate system, whereby the user issues intuitive commands for a user-viewpoint-dependent method of alignment of said child element. And, Gadh also

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clearly teaches that VDSF determines the XYZ coordinate axes when a viewpoint-dependent alignment command is issued (Col. 24, lines 6-32). Furthermore, Gadh teaches the representation can be implemented in any conventional 2D-CAD systems or VR-CAD systems utilizing VE (Col. 39, lines 33-44). Examiner respectfully submits that “associative relationship” requires no further explanation and that it will be given its plain meaning as required by MPEP 2111.01. Webster's Dictionary defines associative as “of, or relating to, in association with” while relationship as “a state or character of being related... a natural or logical association between two or more things, connection.”

Referring to claims 2, 4, 6, 8, 20, 24, 26, 28, 30, 42, 46, 48, 50, 52, 64, 68, 70, 72, 74, and 86 Gadh teaches the above, wherein said associative relationship is a parent/child relationship (Col. 24, lines 6-32; Col. 40, lines 14-57). Referring to claims 3, 25, 47, 69, Gadh teaches the above, further including said manufacturing feature exhibiting an associative relationship with another said manufacturing feature (Fig. 55A). Referring to claims 5, 7, 27, 29, 49, 51, 71, 73, Gadh teaches the above, wherein said virtual blank exhibits an associative relationship with another said manufacturing feature or said coordinate system (Fig. 55A). Referring to claims 9-10, 31-32, 53-54, 75-76, Gadh teaches the above, further comprising creating extracts from said master product and process model, wherein said extracts comprise replicated models of said master product and process model at various operations of said manufacturing (Fig. 55C; Col. 10, line 54- Col. 11, line 7). Referring to claims 12-17, 34-39, 56-61, 78-83, Gadh teaches the above, wherein said virtual blank is positioned and oriented relative to said coordinate system, wherein said virtual blank is generated as a three dimensional parametric solid model from a reference set geometry, wherein said reference set geometry is defined by dimensional

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characteristics of a modeled part, wherein establishing said coordinate system comprises one or more datum planes, wherein said coordinate system comprises: creating a first datum plane positioned and oriented relative to a reference, creating a second datum plane positioned and oriented relative to said reference; and creating a third datum plane positioned and oriented relative to said reference, wherein said first datum plane, said second datum plane, and said third datum plane are orthogonal (Figs. 25A-D and 55A).

While Gadh clearly teaches creating a model and constructing a part in the VDSF, Gadh fails to provide for generating a product drawing of the actual part and generating machining instructions to create the actual part by machining the manufacturing feature into the blank.

While the instant claims call for horizontally structured CAD/CAM manufacturing, as presented by Gadh above, the instant specification appears to describe this horizontal structure with respect to the establishment of relationships that are taught as both horizontal and vertical (See page 4-5 and 9-10 of the instant specification). Therefore, even though the examiner interprets the claims to require at least a horizontally structured relationship in the preamble, the claims do not required any of the limitations in the body of the claims to have such a horizontal structure, exclusive, or non-exclusive CAD/CAM relationship. Namely, the claims do not require a horizontally structured CAD/CAM relationship with respect to generating a product drawing of the actual part and generating machining instructions to create the actual part by machining the manufacturing feature into the blank.

Furthermore, the recitation “horizontally structured CAD/CAM manufacturing” has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or

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the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951). Clearly, the body of the claims do not depend on the preamble for completeness, in fact, applicant has admitted that the intended use of the horizontal structure is not limited by non-verticality (See pages 4-5 of the instant specification).

The claims, as such, do not require any functional relationship between the limitation of an associative relationship and the limitation of generating machining instructions to create the actual part by machining the manufacturing feature into the blank. Furthermore, neither the part nor blank are required to be the product.

In view of the above, the examiner respectfully submits that patentability resides in the determination of non-obviousness with respect to generating a product drawing of the actual part, and generating machining instructions to create the actual part by machining, in real life, the manufacturing feature into the blank. The examiner respectfully submits that generating a product drawing of an actual part and generating machining instructions to create the actual part by machining, in real life, a manufacturing feature, into a blank, is commonly known in the art, and therefore, the examiner is unable to make said determination of non-obviousness at this time.

The examiner believes these limitations are clearly taught by any of the prior art references of Belkhiter or Rebello.

Referring to claims 1, 23, 45, and 67, Belkhiter clearly teaches analogous art, wherein a conventional CAD/CAM system is used to produce a part drawing (Col. 2, lines 53-66 of '221) and then generating machining instructions to create said actual part by machining

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manufacturing features into a blank (See Cols. 7-8, table 2; Col. 1, lines 6-14 of '221). Referring to claims 11, 18-19, 21-22, 33, 40-41, 43-44, 55, 62-63, 65-66, 77, 84-85, 87-88, Belkhiter teaches creating extracts from a master product and process model, wherein said extracts are used to generate manufacturing process sheets, wherein said product drawings include an associative relationship with said master product and process concurrent model (Col. 14, lines 6-11 of '221), wherein the master product and process concurrent model links to a process planning system, wherein said process planning system comprises automated creation of a manufacturing process plan (Fig. 1, element 14; Col. 3, lines 24-48 of '221).

Referring to claims 1, 23, 45, and 67, Rebello clearly teaches analogous art, wherein figure 2 clearly shows the processing architecture of the CAD/CAM system, wherein the processor uses a data extractor and populator to populate the extracted data in drawing files and NC machining data files (Col. 3, lines 18-32 of '455), if the drawings and NC machining data are satisfactory, the designer releases them to manufacturing for production of the part (Col. 1, lines 10-18 of '455). Referring to claims 11, 18, 19, 33, 40, 41, 55, 62, 63, 77, 84, 85, Rebello teaches creating extracts from a master product and process model (Col. 4, line 63 – Col. 5, line 6 of '455), wherein said extracts are used to generate manufacturing process sheets (Col. 7, claim 19; Col. 2, lines 39-64; Fig. 3, element 26 of '455), wherein said product drawings include an associative relationship with said master product and process concurrent model (Col. 3, lines 5-17; Col. 6, lines 13-17 of '455).

Therefore, it would have been obvious to one of ordinary skill in the art at the time that the invention was made to combine the teachings of either Belkhiter or Rebello with the teachings of Gadh.

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One of ordinary skill in the art would have been motivated to combine Belkhiter with Gadh because Belkhiter teaches a part program suitable for machining a part from a drawing without the need for human intervention. Furthermore, Belkhiter teaches a system that reduces lead-time between the request for a part and the machining of a part. Further still, Belkhiter teaches a system that reduces manpower costs (Col. 1, line 62 – Col. 2, line 2 of '221).

One of ordinary skill in the art would have been motivated to combine Rebello with Gadh because Rebello teaches a system and method for managing files of a product in a design and manufacturing environment wherein costly mistakes are avoided and time to bring the product to market is reduced. Other advantages include discovery of inconsistencies, the ability to incorporate agility and concurrent engineering into design processes and divide roles across and between organizational structures quickly and efficiently (Col. 5, lines 37-46 of '455).

17. Claims 1, 3, 5, 7, 9, 11, 12-19, 21, 22, 23, 25, 27, 29, 31, 33, 34-41, 43, 44, 45, 47, 49, 51, 53, 55, 56-63, 65, 66, 67, 69, 71, 73, 75, 77, 78-85, 87, 88 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 5,075,866 to Goto in view of U.S. Pat. No. 4,928,221 to Belkhiter.

Referring to claims 1, 18-19, 23, 40-41, 45, 62-63, 67, and 84-85, Goto clearly teaches a method, system, part, and computer program of CAD/CAM manufacturing for concurrent product and process design (Col. 1, lines 7-16), comprising: selecting a blank for machining into an actual part establishing a coordinate system (Fig. 13A; Col. 5, lines 34-35; Col. 15, lines 40-42); creating a master product and process concurrent model (Col. 5, lines 12-61; Fig. 3A; Col. 15, lines 40-59) comprising: a virtual blank corresponding to said blank (Fig. 13A; Col. 15, lines

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42-43); a manufacturing feature (Col. 16, lines 3-21); virtual machining of said manufacturing feature into said virtual blank (Col. 16, lines 3-21), said manufacturing feature exhibiting an associative relationship with said coordinate system (See Figs. 13); generating a product drawing of said actual part (Col. 5, lines 58-61); and generating machining instructions to create said actual part by machining said manufacturing feature into said blank (Col. 5, lines 58-61).

Referring to claims 3, 25, 47, 69, Goto teaches the above, further including said manufacturing feature exhibiting an associative relationship with another said manufacturing feature (Fig. 13C, s36). Referring to claims 5, 7, 27, 29, 49, 51, 71, 73, Goto teaches the above, wherein said virtual blank exhibits an associative relationship with another said manufacturing feature or said coordinate system (Fig. 13C, s40). Referring to claims 12-17, 34-39, 56-61, 78-83, Goto teaches the above, wherein said virtual blank is positioned and oriented relative to said coordinate system, wherein said virtual blank is generated as a three dimensional parametric solid model from a reference set geometry, wherein said reference set geometry is defined by dimensional characteristics of a modeled part, wherein establishing said coordinate system comprises one or more datum planes, wherein said coordinate system comprises: creating a first datum plane positioned and oriented relative to a reference, creating a second datum plane positioned and oriented relative to said reference; and creating a third datum plane positioned and oriented relative to said reference, wherein said first datum plane, said second datum plane, and said third datum plane are orthogonal (Fig. 13A, element S20).

Goto fails to teach CAD/CAM manufacturing that is horizontally structured. Examiner respectfully notes the arguments posed above with respect to the term “horizontally structured”.



However, referring to claims 1, 23, 45, and 67, Belkhiter clearly teaches analogous art, wherein a conventional CAD/CAM system is used to produce a part drawing (Col. 2, lines 53-66 of '221) and then generating machining instructions to create said actual part by machining manufacturing features into a blank (See Cols. 7-8, table 2; Col. 1, lines 6-14 of '221), wherein the CAD/CAM system is horizontally structured (Fig. 10; Col. 12, lines 5-64 of '221)

Referring to claims 9, 11, 21-22, 31, 33, 43-44, 53, 55, 65-66, 75, 77, 87-88, Belkhiter teaches creating extracts from a master product and process model, wherein said extracts are used to generate manufacturing process sheets, wherein said product drawings include an associative relationship with said master product and process concurrent model (Col. 14, lines 6-11 of '221), wherein the master product and process concurrent model links to a process planning system, wherein said process planning system comprises automated creation of a manufacturing process plan (Fig. 1, element 14; Col. 3, lines 24-48 of '221).

Therefore, it would have been obvious to one of ordinary skill in the art at the time that the invention was made to combine the teachings of Belkhiter with the teachings of Goto.

One of ordinary skill in the art would have been motivated to combine Belkhiter with Goto because Belkhiter teaches a part program suitable for machining a part from a drawing without the need for human intervention. Furthermore, Belkhiter teaches a system that reduces lead-time between the request for a part and the machining of a part. Further still, Belkhiter teaches a system that reduces manpower costs (Col. 1, line 62 – Col. 2, line 2 of '221).

### ***Double Patenting***

18. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v.*

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*Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

19. Claims 2, 46, and 68 are rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 1, 47, and 62 of prior U.S. Patent No. 6,775,581 to Landers. This is a double patenting rejection. The body of claims 2, 46, and 68 recite the same limitations as the body of claims 1, 47, and 62, of prior U.S. Patent No. 6,775,581 to Landers. Although the preamble of claims 2, 46, and 68 does not contain the term “modeling”, the examiner believes that the term CAD in claims 2, 46, and 62 inherently includes modeling, and therefore the preamble of claims 2, 46, and 62 also recite the same limitations as the preamble of claims 1, 47, and 62 of prior U.S. Patent No. 6,775,581 to Landers.

20. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

21. Claims 1, 3-22, 45, 47-67, and 69-88 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-21 and 47-78 of U.S.

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Patent No. 6,775,581 to Landers. Although the conflicting claims are not identical, they are not patentably distinct from each other because

Claim(s) 1, 3-22, 45, 47-67, and 69-88 are generally broader than claims 1-21 and 47-78 in U. S. Patent No. 6,775,581 to Landers. Broader claims in a later application constitute obvious double patenting of narrow claims in an issued patent. See In re Van Ornum and Stang, 214, USPQ 761, 766, and 767 (CCPA) (The court sustained an obvious double patenting rejection of generic claims in a continuation application over narrower species claims in an issued patent) ; In re Vogel, 164 USPQ 619, 622, and 623 (CCPA 1970) (Generic application claims specifying “meat” is obvious double patenting of narrow patent claims specifying “pork”).

22. Claim 24 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 38 and 42 of U.S. Patent No. 6,775,581 to Landers in view of U.S. Pat. No. 4,928,221 to Belkhiter.

Claim 38 of U.S. Patent No. 6,775,581 to Landers recite all of the limitations of claim 24 of the instant application, however fail to recite the limitations of generating a product drawing of said actual part.

Claim 42 of U.S. Patent No. 6,775,581 to Landers recite all of the limitations of claim 24 of the instant application, however fail to recite the limitations of generating machining instructions to create said actual part by machining said manufacturing feature into said blank.

However, Belkhiter clearly teaches analogous art, wherein a conventional CAD/CAM system is used to produce a part drawing (Col. 2, lines 53-66 of ‘221) and then generating machining instructions to create said actual part by machining manufacturing features into a blank (See Cols. 7-8, table 2; Col. 1, lines 6-14 of ‘221).

Therefore, it would have been obvious to one of ordinary skill in the art at the time that the invention was made to modify the teachings of Landers with the teachings of Belkhiter.

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One of ordinary skill in the art would have been motivated to combine Rebello with Gadh because Belkhiter teaches a part program suitable for machining a part from a drawing without the need for human intervention. Furthermore, Belkhiter teaches a system that reduces lead-time between the request for a part and the machining of a part. Further still, Belkhiter teaches a system that reduces manpower costs (Col. 1, line 62 – Col. 2, line 2 of '221).

### *Conclusion*

21. The prior art or art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following patents or publications are cited to further show the state of the art with respect to horizontally structured CAD/CAM.

U.S. Pat. No. 6,735,489 to Khurana.

The following patents or publications are cited to further show the state of the art with respect to a master product and process concurrent model created in a CAD/CAM environment.

U.S. Pat. No. 6,434,441 to Beauchamp (Col. 4, lines 10-27; Cols. 5-6).

The following patents or publications are cited to further show the state of the art with respect to associative parent-child relationships between product drawings and master product model.

U.S. Pat. No. 5,732,264 to Tanaka.

22. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sean P. Shechtman whose telephone number is (703) 305-7798. The examiner can normally be reached on 9:30am-6:00pm, M-F.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo P. Picard can be reached on (703) 308-0538. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SPS

Sean P. Shechtman

September 26, 2004

A handwritten signature in black ink, appearing to read 'L. P. Picard', with a stylized flourish at the end.

**LEO PICARD  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100**